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# GENERAL VIEW

OF THE

# AGRICULTURE

OF THE COUNTY OF

# NORTHUMBERLAND.

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# GENERAL VIEW
OF THE
# AGRICULTURE
OF THE COUNTY OF
# NORTHUMBERLAND,
WITH
OBSERVATIONS ON THE MEANS OF ITS IMPROVEMENT.

BY
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AND
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DRAWN UP FOR THE CONSIDERATION OF THE BOARD OF AGRICULTURE
AND INTERNAL IMPROVEMENT.

K. Academies etc

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# INTRODUCTION.

THE County of Northumberland, including thoſe parts of the county of Durham, called Iſlandſhire, Norhamſhire, and Bedlingtonſhire,

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| Is bounded on the eaſt by the German ocean, | 60 miles |
| weſt by Roxburghſhire, - - | 50 |
| and Cumberland, - | 47 |
| north by Berwickſhire, - | 18 |
| ſouth by the county of Durham, | 50 |
| Making the whole circumference - | 232 miles. |

It is ſituated between the latitudes of 54 deg. 51 min. and 55 deg. 48 min. north; and longitudes of 1 deg. 00 min. and 2 deg. 27 min. weſt from London: its greateſt length from north to ſouth is 64 miles, and breadth 48; and contains

| | Acres. |
|---|---|
| 1980 ſquare miles, which may be divided into lands that are, or may be cultivated by the plough, - - - | 817200 |
| And mountainous diſtricts improper for tillage, | 450000 |
| Making in the whole | 1267200 |

Of the mountainous diſtricts, thoſe around Cheviot are the moſt valuable; being, in general, fine green hills, thrown (by ſome of thoſe convulſive changes which this globe has at ſome time experienced) into a numberleſs variety of forms, whoſe ſloping verdant ſides incloſe and ſhelter many deep narrow glens. Through the whole of this diſtrict no mineral, or other kind of ſtone, is found, except granite or whinſtone; which ſeems to compoſe the greateſt part of theſe mountains. From its contexture and colours---from the ſhape of the hills---and the ſharp-pointed gravelly ſoil they are covered with---and from a ſpecies of lava found in the lower diſtricts, it is more than probable, that theſe hills have been formed by volcanic eruptions. They extend from the head of Coquet, down to Allevinton; from thence northward to Prendwick, Branton, Ilderton, Wooler, Kirknewton, and Mindrim, and occupy at leaſt an area of 90000 acres.

The remaining part of mountainous diſtricts lies chiefly on the weſtern part of the county, ſome of which adjoins the county of Durham; but the largeſt portion extends from the Roman Wall to the river Coquet (with a few intervening incloſed vales) and to the moors north of Rothbury. They are not marked by any ſtriking irregularities of ſurface, being in general extenſive, open, ſolitary waſtes, growing little elſe but heath, and affording a hard ſubſiſtence to the flocks that depaſture them.

The lower parts preſent a more pleaſing proſpect of incloſed country, extenſive farms, ſcattered villages, populous towns, and buſy ſcenes of trade; principally occaſioned by the vaſt reſources of coal, which this county in ſo many parts abounds with: it is alſo favoured with other valuable minerals, particularly lead ore, lime, and marl.

Its principal rivers are the Tyne, (whoſe main branches are the Derwent, and the Reed) Blythe, Wanſbeck, Coquet, Aln, Till, and Tweed.

The Tyne and Tweed are moſt eminent for their navigation; the tide flowing up the former 16 miles, and up the latter eight miles; the trade upon the Tyne is immenſe; upon the Tweed confined to a few veſſels, and thoſe chiefly fiſhing ſmacks, employed to carry the ſalmon, gilſe, bull trout, whitlings, &c. to London, of which great quantities are taken in the Tweed, to the amount of 20,000l. worth a year. A rent of 800l. a year is paid for a fiſhing of 200 yards in length, near the mouth of the river; and the ſame rent is paid for other two fiſhings above the bridge, not more than 250 yards in length each.

*The Climate*—in regard to temperature, is ſubject to great variation; upon the mountains, ſnow will often continue for ſeveral months, (and may frequently be ſeen there of a conſiderable depth) when there is none in the lower diſtricts. The weather is very inconſtant, but moſtly runs in extremes. In the ſpring months, the cold, piercing eaſterly winds are moſt prevalent; and our longeſt droughts are always accompanied by them: in ſome places they have acquired the name of *ſea-pines*, from the ſlow progreſs vegetation makes, when ever they continue for a few weeks. Rain is of little uſe while they prevail, from the great cold which always attends them.

The mild weſtern and ſouthern breezes rarely take place before June; they are certain harbingers of rain and vigorous vegetation; and are the moſt prevailing winds through the ſummer and autumn: in the latter ſeaſon, they often blow with tempeſtuous fury; daſh out the corn, and diſappoint the juſt hopes of the induſtrious farmer.

Our greateſt falls of ſnow, or rain, are from the ſouth, or ſouth eaſt; and whenever we have a very high *weſt wind*, it is a certain ſign that a great quantity of rain is falling to the weſtward, in Cumberland and Roxburghſhire.

*The Soil.*—A ſtrong fertile clayey loam occupies the level tract of country along the coaſt, and reaches as far up in general as the great poſt road. It is well adapted to the culture of wheat, pulſe, clover, and grazing.

*Sandy, Gravelly, and Dry Loam*—Or what is here more generally underſtood by turnip ſoil, is found on the banks of the Tyne, from Newburn to Haltwhiſtle; on the Coquet, about and above Rothbury; on the Aln, from its mouth to Alnwick; and down Tweed ſide: but the greateſt quantity of this kind of ſoil is found in the vales of Breamiſh, Till, and Beaumont. The hills ſurrounding the Cheviot mountains are moſtly a dry channelly, ſharp pointed, gravelly loam.

*Moiſt Loams*—on a wet, cold, clay bottom, occupy a large portion of this county, being unſafe for ſheep, and unfit for turnips; they are principally employed in growing grain, rearing young cattle, and feeding ewes and lambs. This ſoil prevails moſt in the middle and ſouth eaſt parts of the county.

*Black Peat Earth*—is the prevailing ſoil in moſt of the mountainous diſtricts, and is found in many places through the lower parts of the county.

At many places in Glendale Ward is found (at various depths, ſometimes within four inches of the ſurface) a ſtratum of hard ſcoria like ſubſtance, which ſeems inimical to vegetation; for, whenever the roots of vegetables get down to it, they turn ſickly; thorns in particular ſeldom exiſt above two or three years after their roots penetrate this ſubſtance. It is probably a ſpecies of lava, which has run down from the adjoining mountains of Cheviot, when in a volcanic ſtate: where it lies at a conſiderable depth, we often find the moſt fertile ſoils.

## ESTATES AND THEIR APPENDAGES.

LANDED property in this county is moſtly freehold. Eſtates vary in their annual value from 20 to upwards of 20,000l. a year; one in particular is upwards of 40,000l. Small eſtates, from 20 to 200l. a year, are found in the ſouthern and middle parts of the county, but very rarely in the northern.

The land is moſtly occupied by tenants; in Glendale and Bambro Wards, the farms are large, from 500l. to 1500l. a year;* very few under 100l. In the other parts of the county they are from 50l. to 300l. a year.

very large Farms

*Leaſes*—for twenty-one years, are let on moſt of the principal eſtates, eſpecially in the northern parts of the county. Some proprietors of land, in the other diſtricts, let only for nine, twelve, or fifteen years. The general time of entry is the 12th of May.† The covenants vary with circumſtances; but we think the following the beſt calculated for improvement, and the benefit of both landlord and tenant:

Leases

After the uſual reſervations of mines, woods, &c. and proviſoes of re-entry on—non-payment of rent, or alienation, &c. the tenant covenants to pay the rent—all taxes—keep and leave all in repair—not to ſell hay, ſtraw, or other fodder, from off the premiſes—to lay the dung on the premiſes, except that bred the laſt year—not to ſow any hemp, flax, muſtard, or rape, except the laſt, for green food—not to depaſture more ſtints the laſt year, than were depaſtured for two years preceding—to deſtroy the moles yearly, and ſcale the graſs grounds—to threſh the waygoing crop in an uniform manner, and deliver a daily ſupply of ſtraw to the next tenant

Covenants

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* There are ſome tenants in the northern parts of the county, that farm from 2000l. to 4000l. a year, and upwards.

† Upon the Duke of Northumberland's eſtate the time of entering is Lady-Day, and the offgoing tenant has no waygoing crop.

tenant—to keep uneaten the lands ſown with graſs ſeeds in the laſt year of the term, from the 1ſt of October, except one half to be eaten by the offgoing tenant after the 1ſt of April, to the end of the term—to permit the leſſor to ſow graſs ſeeds on the waygoing crop—and to plough the lands intended for fallow five months before the expiration of the term—to have no more in ploughing than * acres at one time—to fallow yearly one-third of the tillage lands, and lay upon every acre fother of lime, where neceſſary; or, in lieu thereof, fother of dung—not to keep any land in tillage more than three years at one time—to lay to graſs yearly one-third of the tillage lands, and ſow upon every acre pounds of clover, &c. or other ſeeds ſuited to the ſoil; to keep ſuch lands in graſs at leaſt two or three years, before they are ploughed out again—to lay down to graſs, or have in graſs the laſt three years, all thoſe fields called —to keep in graſs during the whole of the term, and at the end thereof leaving in graſs all thoſe fields called and all ſuch lands as ſhall be converted into watered meadows—to be at one half the expence of making new quick fences, and of cleaning and rearing them for ſeven years after firſt planted—and others, that ſituation or circumſtances may require.

The leſſor covenants, that the tenant ſhall have peaceable poſſeſſion, and a waygoing crop from off two-thirds of the tillage lands, with the uſe of the ſtack-yards, barns, and grainaries, for twelve months after the expiration of the term; alſo to be at one-half the expence of making all new quick fences, and of cleaning and rearing them for ſeven years after firſt planted; with other covenants that may be agreed on, reſpecting building, &c.

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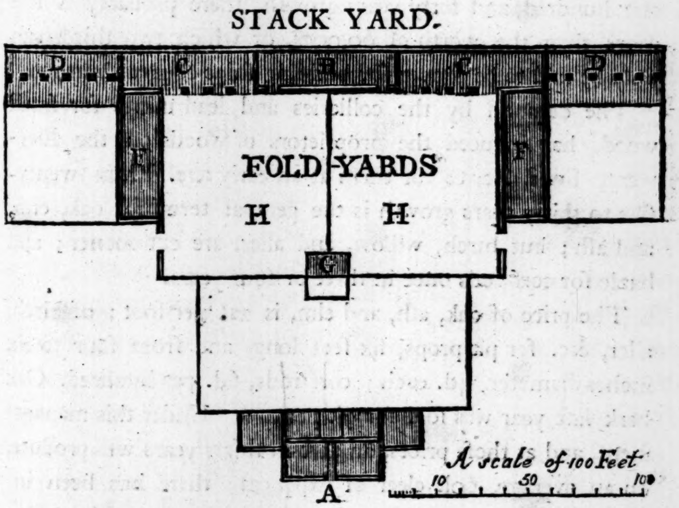
* Generally from one-third to near one-half, on the larger farms; but on ſome ſmall farms it is more, where the clover ſyſtem is purſued.

*Buildings*—for the uſe and convenience of farms were formerly very ſhabby and ill contrived; but thoſe that have been erected of late years, are better adapted to the various purpoſes wanted by extenſive farms and improved cultivation.

The moſt approved form of diſtributing the various offices, is, on the eaſt, weſt, and north ſides of a rectangular parallelogram, which is generally divided into two fold yards, for cattle of different ages, the ſouth being left open to admit the ſun; and for the ſame reaſon, and alſo for the ſake of cleanlineſs and health, the farm houſe is removed in front twenty or thirty yards; between which, and the ſouth wall of the fold, is a ſmall court for coals, young poultry, &c. But as a ſmall plan will ſhew the diſpoſition of the various offices much better than a verboſe deſcription, we ſhall adopt that mode in the annexed plan.



A. The farm-houſe.
B. The barn, 18 feet by 60.
C. Sheds, over which are granaries.
D D. Ditto, upon which are built corn-ſtacks; one of theſe are for wintering yearling calves, the other for holding implements of huſbandry.
E. Byers for cows and work-oxen, 16 feet by 48.
F. Stables.
G. Pig-ſtyes, with hen-houſe above.
H H. Fold yards for cattle of different ages.

The materials uſed for building are, in general, ſtone. Formerly thatch was the univerſal covering, but it is now juſtly exploded, and tiles or ſlates ſubſtituted in its ſtead. The ſmall dark blue ſlate, from Scotland, is the kind moſtly uſed here, and are much ſuperior to tiles; for, though they are more expenſive at firſt, yet it is probable, that in a few years they may be as cheap, from the repairs tiles ſo frequently require, eſpecially where they are ſo ill manufactured.

Fir timber is univerſally uſed for all the purpoſes of building.

*Woods*—growing in a natural ſtate are found moſtly on the banks of rivers; thoſe of the north and ſouth Tyne, the Wanſbeck, Coquet, and their tributary ſtreams, have by far the greateſt quantity. Of old oak timber, from eighty to one hundred and forty years growth, there probably is not more than the worth of 60,000l. of which two thirds can only be ſaid to be proper for building ſhips of great burthen.

The demand by the collieries and lead mines for ſmall wood, has induced the proprietors of woods on the Derwent, Tyne, &c. to cut them at an early age. From twenty-five to thirty years growth is the general term for oak, elm, and aſh; but birch, willow, and aller, are cut ſooner; and hazle for corf-rods once in three or four years.

The price of oak, aſh, and elm, is 2s. per foot; of birch, aller, &c. for pit props, ſix feet long, and from four to ſix inches diameter, 4d. each; corf-rods, 6d. per hundred. Oak bark laſt year was ſold for 9l. per ton. Under this management, and at thoſe prices, an acre in thirty years will produce, on an average, 60l. clear of expences; there has been inſtances of an acre of wood thirty-two years old, ſelling for 100l. and another of ſixty years growth, worth 200l. per acre; but theſe were in a particularly favourable ſituation.

In the management of theſe woods, the general practice is to cut all away together. The ſyſtem of Anthony Surtees, Eſq. of Newbiggen, we think preferable: he takes his away in *patches*; and as the older trees interfere with the younger ſprings, and where a thriving healthy oak is in a convenient ſituation, he lets it ſtand for timber. By this means the young ſpring is ſheltered, and an annual produce of upwards of 100l. is obtained from ſixty acres of woodland.

Plantations, on an extenſive ſcale, are riſing in every part of the county; and are in almoſt every inſtance doing well, and promiſe not only to repay the ſpirited exertions of the proprietors, but will add greatly to the ornament and improvement of the country.

## LIVE STOCK.

*Horſes.*—THE beſt draught horſes uſed in this county are brought from Clydſdale, in Scotland; they are in general from 15½ to 16 hands high; ſtrong, hardy, remarkable good and true pullers; a reſtive horſe being rarely found among them.

Thoſe bred in the county are of various ſorts, deſcended from ſtallions of different kinds, from the full blood racer, to the ſtrong, heavy, rough legged black. From the full blood ſtallions and country mares, are bred excellent hunters, road and carriage horſes;—and from the other kinds of ſtallions are bred the draught horſes, which, in general, are middle ſized, active animals, well adapted to the huſbandry of the country.

*Cattle.*—The different kinds of cattle bred in this county are the ſhort horned—the Devonſhire—the long horned—the Galloway polls—and the wild cattle.

The ſhort horned kind have been long eſtabliſhed over the whole county, the other kinds are found only in the hands of a few individuals, who have introduced them with a laudable view of comparing their merits with the eſtabliſhed breed of the country.

*The Devonſhire breed* is only in the poſſeſſion of Walter Trevillyan, Eſq. of Nether Witton, who introduced them about three years ſince; their offspring has not yet got to a proper age to form a judgment of their comparative merits.

Thoſe who have tried the long horns, have generally given them up in favour of the ſhort horns, which have been very much improved of late years, by the exertions and attention of enterprizing breeders; who have already improved them ſo far, as to be ſold fat to the butchers at 3½ years old. The weight of the carcaſs is in general from 60 to 80 ſtone, (14 lb. to the ſtone) but there are inſtances of individuals attaining much greater weight.

Sir H. Grey bred and fed two ſeven years old oxen that weighed 152 ſtone, 9 lb. the four quarters only; and a ſpayed heifer, 132 ſtone, 6 lb. ditto. Mr. Smith of Togſtone, a cow, 127 ſtone, 11 lb. ditto.

But large ſize is not now conſidered as an excellence: quick feeders that lay on their fat upon the moſt valuable parts, and have the leaſt offal in the coarſe parts, are the kind which every enlightened breeder wiſhes to be poſſeſſed of.

*The Galloway Polls*—have only been tried by one or two farmers. On the edge of the Cheviot hills they have anſwered very well.

*The Wild Cattle*—are only found in Chillingham Park, belonging to the Earl of Tankerville, and as it is probable, they are the only remains of the *true and genuine* breed of that ſpecies of cattle, we ſhall be more particular in our deſcription.

Their colour is invariably white, muzzle black; the whole of the inſide of the ear, and about one third of the outſide from the tip, downwards, red; horns white, with black tips, very fine, and bent upwards. Some of the bulls have a thin upright mane, about an inch and an half, or two inches long. The weight of the oxen is from 35 to 45 ſtone, and the cows from 25 to 35 ſtone, the four quarters; 14 lb. to the ſtone. The beef is finely marbled, and of excellent flavour.

From the nature of their paſture, and the frequent agitation they are put into, by the curioſity of ſtrangers, it is ſcarce to be expected they ſhould get very fat; yet the ſix years old oxen are generally very good beef. From whence it may be fairly ſuppoſed, that in proper ſituations, they would feed well.

At the firſt appearance of any perſon they ſet off in full gallop; and, at the diſtance of two or three hundred yards, make a wheel round, and come boldly up again, toſſing their heads in a menacing manner. On a ſudden they make a full ſtop, at the diſtance of forty or fifty yards, looking wildly at the object of their ſurprize; but upon the leaſt motion being made, they all again turn round, and gallop off again with equal ſpeed, but not to the ſame diſtance: forming a ſhorter circle, and again returning with a bolder, and more threatening aſpect than before, they approach much nearer, probably within thirty yards, when they make another ſtand, and again gallop off. This they do ſeveral times, ſhortening their diſtance, and advancing nearer; till they come within a few yards, when moſt people think it prudent to leave them, not chuſing to provoke them further, as it is probable, that in a few turns more they would make an attack.

The mode of killing them was, perhaps, the only modern remains of the grandeur of ancient hunting. On notice being given, that a wild bull would be killed upon a certain day, the inhabitants of the neighbourhood came mounted, and armed with guns, &c. ſometimes to the amount of an hundred horſe, and four or five hundred foot, who ſtood upon walls or got into trees, while the horſemen rode off the bull from the reſt of the herd, until he ſtood at bay; when a markſman diſmounted and ſhot. At ſome of theſe huntings, twenty or thirty ſhots have been fired before he was ſubdued. On ſuch occaſions, the bleeding victim grew deſperately furious, from the ſmarting of his wounds, and the ſhouts of ſavage joy that were echoing from every ſide: but, from the number of accidents that happened, this dangerous mode has been little practiſed of late years; the park-keeper alone generally ſhooting them with a rifled gun, at one ſhot. When the cows calve, they hide their calves, for a week or ten days, in ſome ſequeſtered ſituation, and go and ſuckle them two or three times a day. If any perſon come near the calves, they clap their heads cloſe to the ground, and lie like a hare in form, to hide themſelves. This is a proof of their native wildneſs, and is corroborated by the following circumſtance, that happened to the writer of this narrative, who found a hidden calf, two days old, very lean, and very weak On ſtroking its head, it got up, pawed two or three times like an old bull, bellowed very loud, ſtepped back a few ſteps, and bolted at his legs with all its force; it then began to paw again, bellowed, ſtepped back, and bolted as before: but knowing its intention, and ſtepping aſide, it miſſed me, fell, and was ſo very weak, that it could not riſe, though it made ſeveral efforts. But it had done enough, the whole herd were alarmed, and coming to its reſcue, obliged me to retire; for the dams will allow no perſon to touch their calves, without attacking them with impetuous ferocity.

When any one happens to be wounded, or grown weak and feeble through age or ſickneſs, the reſt of the herd ſet upon it, and gore it to death.

*Of Sheep.*—In this county there are three diſtinct breeds.—The Cheviot ſheep, the heath ſheep, and the long wooled ſheep.

*The Cheviot Sheep*—are hornleſs, the faces and legs in general white.* The *beſt breeds* have a fine open countenance, with lively prominent eyes; body long, fore quarters wanting depth in the breaſt, and breadth both there and on the chine; fine clean ſmall boned legs; thin pelts, weight of carcaſs when fat, from 12 to 18 lb. per quarter; fleeces from 2½ to 3½ lb. each, and ſold in 1792, for 11d. per lb. The wool is not all fine, there being in a fleece of 3 lb. weight, only 2 lb. of fine wool, worth one ſhilling per lb. (when the whole fleece ſells at 10d. per lb.) and one pound of coarſe, worth only 6d. per lb.

They are bred only upon the hilly diſtricts in the north-weſt part of the county, and do not extend much farther ſouth than Reedwater.

The *beſt kind* of theſe ſheep are certainly a very hardy and valuable mountain ſheep, where the *paſture is moſtly green ſward*, or contains a large portion of that kind of herbage; which is the caſe with all the hills around Cheviot, where theſe ſheep are bred; for as to the mountain of Cheviot itſelf, no kind of ſheep whatever are bred upon it; and we find it an univerſal practice, amongſt the moſt experienced ſheep farmers, to depaſture the *heathy diſtricts* with old ſheep, (gimmers and wethers) but they never attempt to keep a breeding flock upon them.

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* Many of the Cheviot ſheep have dark faces, and were more ſo formerly. We were informed by Mr. Chiſholm, Mr. Readhead, Mr. Marſhall, &c. that theſe dark faced ones grew equally as fine wool, were as hardy, and equally as good thrivers as the white faced ones; but that the people to whom they ſold their ſheep, and eſpecially tups, preferred white faces; for which reaſon, they have endeavoured to get quit of black faces.

Blindburn is probably the higheſt and coarſeſt paſture in this county where this kind of ſheep are bred. We examined the herbage, and found, that the ewe-paſture had a conſiderable portion of green ſward, the coarſeſt parts of which conſiſted of *nardus ſtricta*, (wire bent *); *juncus ſquarroſus*, (ſtool bent); *ſcirpus cæſpitoſus*, (ling †); *eriophorum vaginatum*,‡ (moſs); with patches of *erica vulgaris*, (heath or hadder).

The ſhape of this breed of ſheep has been much improved of late years; but all thoſe who have been aiding in making theſe improvements, readily acknowledge, there is ſtill much to do; eſpecially to the fore-quarter, which they all agree is very defective; but we hope it will not long remain ſo, as we think we ſee a ſpirit of inveſtigation ariſing amongſt theſe breeders, that in a few years will remedy not only this defect, but will diſcover others, which at preſent they are not willing to admit. But as knowledge is progreſſive, we cannot expect the perfection of this breed of ſheep can be obtained at once; it muſt proceed by ſlow gradations, as every other improvement hath done; it is a great point gained, that we admit defects, and are deſirous to amend them.

That breed of ſheep which brings the moſt profit to the farmer, will always be purſued by him, whatever his ſituation;

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* The Engliſh names inſerted after the Latin ones, are ſuch as the Cheviot ſhepherds know them by.

† In the county of Durham, Yorkſhire, and ſome other parts, *erica vulgaris* is known by the name of *ling*.

‡ This plant grows in wet moſſy places; it generally ſprings in February and March. The ſheep are remarkably fond of it, not only the leaves, but the roots; and will ſcratch away the moſſy ſoil ſix or eight inches deep, to obtain it. We have ſeen them working up to the eyes for this purpoſe. The ſhepherds tell wonderful tales of the nutritive powers of this plant; aſſerting, that ſheep reduced by hunger, will recover faſter, and thrive much better upon this plant, than turnips. It is certainly a valuable plant for three or four weeks; but after it has flowered, the ſheep totally neglect it.

tion; but that object, we preſume, is not to be obtained in this diſtrict from *fine wool alone*. Perfect mountain ſheep ſhould be *hardy*, *well formed*, and *quick feeders*. Theſe qualities will always recommend them to the grazier, who will never purchaſe a ſlow feeding animal, while he can get one of a different ſort, though at a conſiderable advanced price. But if to theſe qualities, ſo eſſential to the ſale of a mountain farmer's ſtock, can be added a *fleece of fine wool*, a breed of ſheep would then be obtained, the propereſt for a hilly diſtrict of any we have yet ſeen. There is little doubt but this may be accompliſhed by *proper ſelection*; and probably the *beſt kind* of Cheviot ſheep, from their hardineſs, and producing a portion of fine wool, are the propereſt ſtock for laying the foundation of ſo deſirable an improvement.

Mr. Robſon, of Belford, (now of Chatto) ſays, he improved the ſhape of his ſheep very conſiderably; particularly the fore-quarter, and the wool, in having leſs buttocks; by uſing three rams which he purchaſed in Lincolnſhire, thirty-three years ſince; and we know other inſtances of improvement, by uſing tups of ⅓ or ¼ Diſhley blood. In all theſe caſes, we do not find the ſheep leſs hardy, or wool of leſs value; but the carcaſs materially improved.

Mr. Readhead, of Chatto, is of opinion, that there are many ſituations amongſt the Cheviot hills, where the South Down ſheep would do very well. We readily join him in the idea, and hope, thoſe who are poſſeſſed of ſuch ſituations, will not be long of making a *fair* experiment; ſhould it ſucceed, a very great improvement of the Cheviot wool, in point of fineneſs, might be derived by croſſing with this breed: but probably what it gained in fineneſs, it would loſe in weight, for it is not the value per *pound* which conſtitutes the farmer's profit, but the value *per fleece*; or rather, that breed is *the beſt*, that brings the *moſt profit in fleece and carcaſs jointly*, from the ſame ground, in equal times. Opinions and conjectures will never decide this matter, it can only be done by *fair* experiments, conducted by perſons of judgment and impartiality.

*The Mode of Management*—amongſt the ſheep farmers of theſe hills, is to divide their flock into different parcels, viz. lambs, hogs, gimmers, ewes, and wethers, and each parcel kept on ſuch paſturage as is thought to be moſt proper for them. Every parcel is attended by a ſhepherd, who is bound to return the number of ſheep delivered to him, either alive, or in his acount of dead ſheep, which are in general ſold at different prices, according to their goodneſs.

*The Heath Sheep*—have large ſpiral horns, black faces and legs, a fierce wild looking eye, and ſhort firm carcaſſes (weighing from 12 to 16 lb. per quarter) covered with long, open, coarſe ſhagged wool. The fleeces weigh from three to four pound each; and ſold, in 1792, for ſixpence per pound. They are an exceedingly active and hardy race, and ſeem the beſt adapted, of all others, to high expoſed *heathy* diſtricts; ſuch as we find them in poſſeſſion of here, from the weſtern parts of the county of Durham, to North Tyne.

Mr. Hopper, of Blackhedley, depaſtures this kind of ſheep upon a *heathy moor* of 4000 acres; *from whence* he takes them at 3 ½ years old to turnips; and ſells, the May following, from 28 to 32 ſhillings each: he has tried the Cheviot ſheep in the ſame manner, but thinks the other a hardier and better feeding ſheep.

The lower diſtricts of this county were formerly occupied by a variety of *long wooled ſheep*, which were called *Muggs*, probably from their faces being covered with a muff of wool, cloſe to their eyes. Theſe being a ſlow feeding tribe, have given way to the Diſhley breed, which were firſt introduced into this county in the year 1766,* and by their ſuperior merit have ſo far made their way againſt every prejudice and oppoſition, that it is probable, in a few years there will be a difficulty in finding a flock that is not more or leſs related to the Diſhley blood.

*The improved Breed of long wooled Sheep*—are diſtinguiſhed from other long wooled kinds by their fine lively eyes, clean heads, ſtraight broad flat backs, round barrel-like bodies, very fine ſmall bones, thin pelts; and that ſingular property of making fat at an early age, perhaps more than any thing elſe, gives them a ſuperiority over the other breeds in this iſland.

The weight of the carcaſs in general is, ewes three or four years old, from 18 to 26 lb. per quarter; wethers two years old, from 20 to 30 lb. per quarter; the wool upon an avarage, 7½lb. a fleece; the length from 6 to 14 inches; ſold in 1792. at 10d. per lb.

The moſt approved mode of management of this breed of ſheep is as follows: The ewes generally lamb in March, when we give them a few turnips to increaſe their milk. The latter end of June or beginning of July the lambs are weaned, and ſent to middling paſture; but a good paſture would certainly be a more eligible practice. The ewes are milked two or three times to eaſe their udders, and ſuch as are not intended to be continued for breeding, are culled or draughted out, and put to clover: when this fails, they get turnips, and are ſold about Chriſtmas to the butchers, very fat; the price from 34 to 40s. each; frequently meaſuring four or five inches thick of fat on the ſides, and two or three inches down the back, all the way from head to tail. And though this breed are not eminent for much tallow, yet ewes under ſuch circumſtances have been known to produce from eighteen to twenty-four pounds of tallow each.

The lambs, after being weaned, take the name of Hogs. They are generally put to turnips the beginning of November, and continue at them till the middle of April or beginning of May; when the wether hogs are put upon good paſture, or ſecond year's clover. The ſecond winter they have turnips until the clovers are ſufficiently grown to receive them; which is generally about the middle of April: they are clipped or ſhorn about the middle of May, when we begin to ſell them, and are moſtly all ſold by the middle or end of June. Morpeth is our beſt market, where the two ſhear wethers have been ſold for the laſt three years, from forty to fifty ſhillings a head. At this age they are equally fat as the ewes before deſcribed.

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* By Meſſrs. Culley, of Fenton.

We generally reckon one-third of the ewes to have twin lambs. They are put to the tup, ſo as to have lambs at two years old, and kept for breeding until three or four years old, except ſuch as are of particular good forms, or have other valuable properties. Theſe we keep as long as ever they will breed. Such as are defective in ſhape, ſuſpected of being ſlow feeders, or other unprofitable qualities, we never put to the tup, or attempt to breed from them.

*Salving*—was formerly univerſally practiſed, and it was thought the ſheep could not do well without it. In the lower diſtricts it is now almoſt totally diſuſed; and moſt of the hill farmers have laid it aſide, and find their flocks do equally well as before; and the wool ſells for a much better price than when it is ſalved; but it is of leſs weight, as may be naturally expected, from the want of half a pound of ſalve upon each fleece

*Milking.*—It uſed to be a general practice through all this county to milk ewes after the lambs were weaned, for ſix, eight, or ten weeks; from this milk great quantities of cheeſe were made and ſold, for about 3d. per pound, when kept to three or four years old. It is exceedingly pungent, and on that account ſome people prefer it to cheeſe of a much better quality.

To milk ewes for two or three days after the lambs are weaned is a uſeful practice; but when continued to eight or ten weeks, it becomes very detrimental, keeps the ewes lean, and ill prepared for meeting the ſeverities of winter.

This cuſtom has been long diſuſed by the intelligent farmers in the lower diſtricts; and we were glad to find it much laid aſide by the moſt conſiderable hill farmers. The profits of milking ewes for ſix or eight weeks is eſtimated at 8d. per ewe; and it is generally agreed they are decreaſed in value, at leaſt 1s. 6d. per head; of courſe there is a loſs of about 1s. per head by milking. In one inſtance of milking long-wooled ewes, laſt ſummer, there was a loſs of at leaſt 3s. per head.

*Swine.*—The *Berkſhire pigs*, and the large *white breed*, were formerly the moſt prevalent in this county; but the ſmall *black Chineſe breed* has in a great meaſure ſupplanted them, eſpecially upon the large farms; and theſe are likely to give way to a ſmall white breed lately introduced, remarkably quiet, inoffenſive animals; on which account they are principally preferred to the Chineſe breed.

*Goats*—are kept in ſmall numbers, on many parts of the Cheviot hills, not ſo much as an object of profit—but the ſhepherds aſſert, the ſheep flocks are healthier where a few goats depaſture. This probably may be the caſe, as it is well known, that goats eat ſome plants with impunity, that are deadly poiſon to other kinds of domeſtic animals.

The chief profit made of theſe goats, is from their milk being ſold to invalids, who come to Wooller in the ſummer ſeaſon.

*Rabbits*—are found in conſiderable numbers among the ſand hills along the coaſt, and are probably the moſt eligible ſtock for ſuch ſituations.

## FARMS, AND THEIR MANAGEMENT.

IN the lower diſtricts of this county are found a few farms applied to grazing only; but the greateſt part are employed in a mixture of arable and graſs.

The graſs land is applied to the various purpoſes of grazing, dairying, breeding young cattle, and, in ſome places, in breeding ſheep.

*Grazing.*---Oxen are moſtly grazed in the eaſtern part of the county, and a few in the vicinity of Whittingham; they are bought in May or June, and ſold as they become ready, to ſupply the large fleets of colliers and other trading veſſels belonging to Newcaſtle, Shields, Sunderland, Hartley, and Blythe.

Some few graziers buy only ſuch oxen as are forward, by having got turnips in the ſpring: theſe generally go off in June, and are followed by cows, heifers, or kyloes; of which, thoſe that do not get fat on the paſtures, to be ſold through the ſummer, are put upon fogs (aftermoths) and ſold in November and December. The cows are alſo bought in the ſpring months, and are chiefly uſed for home conſumption.

The kyloes are bought at Falkirk Tryſts (meetings) or at Newcaſtle Fair, in the autumn, and wintered upon coarſe or rough ground or ſtraw: ſometimes a few turnips are given in the ſpring, and are ſold all through ſummer, as they become fit for the butcher, to ſupply Newcaſtle and other markets. Thoſe that are ready to go off in June, always leave the moſt profit; beef being frequently ſold at that ſeaſon for a ſhilling a ſtone more than the ordinary prices.

The profit of grazing, like all other ſpeculations, varies with circumſtances; but we believe we may venture to average it at 3l. or 3l. 10s. for keeping on graſs from May-day to Michaelmas. Cows, in general, leave more than oxen, in proportion to their weight; but they are ſubject to diſorders of the udder, that frequently reduce the profit very much, and deter many people from grazing them.

Some few graziers, who feed oxen only, follow the old cuſtom of keeping no other kind of ſtock in the ſame paſture; whilſt others, we think with more propriety, mix a few ſheep, and two or three colts, in each paſture; which both turn to good account, and do little injury to the grazing cattle. In ſome caſes ſheep are a real benefit, by eating down and deſtroying the Senecio Jacobœa (Ragwort) which diſgraces ſome of the beſt paſtures in the county, where oxen only are grazed.

*Sheep*.---The practice of fatting ſheep by thoſe who breed them, hath been before deſcribed; a large portion of this county being liable to the rot, and unſafe for a breeding flock, on ſuch lands. Ewes for fat lambs are ventured for one year; theſe are bought in the autumn, put to tup early, (ſome in Auguſt) the lambs ſold in May, June, and July; after which the ewes are fatted, and ſold in October and November.

Such lambs as are early, and go off in May, often ſell for 20s. each; but the others average at about 12s. 6d. The price of fat ewes depends much on their being of a good or ſlow feeding ſort, and will vary from 24s. to 30s. The average may be called 27s. The proceeds from long-wooled ewes will be,

| | £. | s. | d. |
|---|---|---|---|
| A fat lamb | 0 | 12 | 6 |
| Ditto ewe | 1 | 7 | 0 |
| Fleece | 0 | 4 | 6 |
| | £2 | 4 | 0 |
| Deduct prime coſt | 1 | 0 | 0 |
| Profits on ewe and lamb for one year | £1 | 4 | 0 |

The profits of thoſe that have lambs, ſold at 20s. will be 1l. 12s.

The Cheviot ewes are generally put to a large long-wooled tup, which increaſes the ſize of the lambs. The proceeds are,

| | £. | s. | d. |
|---|---|---|---|
| A fat lamb | 0 | 9 | 0 |
| Ditto ewe | 0 | 14 | 0 |
| Fleece | 0 | 2 | 0 |
| | £1 | 5 | 0 |
| Deduct prime coſt of ewe | 0 | 13 | 0 |
| Profit for one year | £0 | 12 | 0 |

Upon ſome particular farms in the middle parts of the county, they feed Cheviot wethers; they are bought in the autumn for 14 or 15s. each, and after keeping about twelve months on graſs, leave a profit of from 10 to 12s. each.

*Dairy.*---This county cannot boaſt of its dairies; thoſe who live in the vicinity of Newcaſtle, and other populous places, make a handſome return by the ſale of milk, freſh butter, &c. but upon moſt large farms in this county, dairies are not held in much eſtimation.

*Breeding young Cattle*---is practiſed in almoſt every part of this county. Upon the large farms cows are kept more for this purpoſe than the profit of dairing. There are inſtances of 50 or 60 calves being brought up in one ſeaſon, by one farmer, who did not milk more than fifteen cows; calves are certainly beſt reared with milk. But where ſuch numbers are reared, many different things have been mixed with, or ſubſtituted for, this nutritive and natural diet. Oats and bean meal, oil cake, lintſeed, boiled turnips, &c. are uſed, and have their various advocates; but lintſeed is moſt approved. Eggs are excellent for mixing in the calf's food, when cheap in the ſpring; perhaps they cannot be better employed. In the ſummer the calves are turned to graſs, and in the firſt winter get turnips and ſtraw. After being a year old, they are kept in ſummer on coarſe paſture; and in winter on ſtraw only.

*Breeding Sheep*—to be ſold to graziers to fatten, is practiſed by the occupiers of ſuch farms as do not afford a ſufficiency of turnips, or ſuch as do not produce any: thoſe who are in the latter predicament, either take turnips for wintering their hogs, or put them upon good old graſs paſtures. The wethers are generally ſold in September and October, being then ſhearlings, for, from 22s. to 26s. each; and the ewes three and a half years old, from 18s. to 22s. each.

*Tillage*.---A few years ſince, the ploughing, and various other purpoſes, for which draughts are wanted upon a farm, were performed by horſes; oxen being only uſed by a few individuals. But ſince the great advance in the price of horſes, oxen are become more general, eſpecially for the purpoſes of ploughing and carting *about home*. They are harneſſed both with yokes and collars. Where four are uſed, a boy is allowed to drive; when two, the man that holds the plough drives with cords. They only plough half a day at a time; each ploughman having four oxen, a pair of which he uſes in the forenoon, and the other in the afternoon. Their food in winter is ſtraw, and a few turnips, in the ſummer graſs.

Horſes are always yoked double, and driven with cords by the ploughman, and in general plough an acre a day; but in the ſeaſon of ſowing turnips, one and a half, or even two acres, are frequently ploughed, on fine light ſoils.

A pair of tolerable draught horſes cannot now be bought under 40l. At the high price oats have been for the laſt two years, the expence of keeping is very great: moſt farmers allow four buſhels of oats per week to two horſes, in the buſy months of the ſpring; and turnip ſeed time, they get more. But then, in the ſummer ſeaſon, their quantity is reduced, ſo that upon the whole, two horſes conſume about 200 buſhels of oats in a year, which, at 2s. per buſhels, is 20l a year, for corn only, for a two horſe draught.

*The Ridges*—are of various forms and ſizes. On the deep ſoiled lands that were uſed as arable, ſome centuries ſince, the ridges are moſtly very high, broad, and crooked; upon ſuch lands as have been recently brought into cultivation they are ſtraight, nearly flat, and in general about twelve or fifteen feet broad; on dry lands they are quite flat, and alternately gathered and ſplit. A breadth of fifteen feet anſwers beſt for ſowing broad-caſt at two caſts.

*Fallows*—are generally ploughed before winter, to meliorate by the froſt. In the middle of April, or beginning of May, thoſe that are intended for turnips, or potatoes, are harrowed and ploughed acroſs; and the ſame operations repeated two or three times, or until it is *ſufficiently fine* for ſowing. The lime is laid on generally before the laſt ploughing. There are ſome who lay the lime upon the ſtubble the autumn before; but we prefer the mode of laying on the lime, when the land is in the *moſt* pulverized ſtate. Fallows for wheat generally receive four ploughings through the ſummer, but are ſeldom harrowed, it being thought an advantage to the wheat to have the land cloddy.

For barley, it is the general cuſtom to plough only once; but the beſt cultivators ſeldom ſow this grain without giving three ploughings; eſpecially when the land is to be ſown with clover and graſs ſeeds.

Every other ſpecies of grain is generally ſown after one ploughing.

*Rotation of Crops.*—In ſome parts of this county, the barbarous ſyſtem of taking three white crops betwixt fallow and fallow, is ſtill to be found. The moſt prevailing ſyſtem is, fallow; wheat; oats; fallow, &c. repeated for two, three, or four fallowings. Upon the ſtrong lands along the ſea coaſt, inſtead of oats after wheat, they generally ſubſtitute peaſe or beans, or beans and peaſe mixed: when laid down to graſs, it is ſown with graſs ſeeds, and continues in graſs ſeven, or more years.

On dry ſoils, the uſual rotation is, after ploughing out from graſs, oats; oats; turnips; barley or wheat ſown up with clovers and ray-graſs, and continued in graſs from four to ſeven, or more years.

The beſt cultivators uſe the following rotations, according to ſoil, ſituation, and circumſtances:

On ſtrong clayey ſoils: oats; fallow; wheat; clover; wheat; fallow. Strong loams: oats; turnips; barley; clover; wheat; beans; oats. Dry ſoils: oats; turnips;

barley; clover; or peaſe drilled; wheat; oats; and oats; turnips; barley, or wheat; and clover or graſs ſeeds, for two, three, or more years, * depaſtured with ſheep. This rotation has been introduced of late years, and is becoming more general, not only upon the turnip ſoils, but upon the ſtrong lands; ſubſtituting clean fallows inſtead of turnips; and thoſe that have tried it, find, that after two or three years clover and graſs ſeeds, the land will grow good crops of oats, which they could never get it to do under their old ſyſtem.

*Wheat.*—The greateſt quantity of this kind of grain raiſed in this county, is after ſummer fallows; it is generally ſown in October. Of late years a good deal has been grown after turnips: this is ſown all through the winter, and as late in the ſpring as the beginning of March; it is alſo grown after clover, beans, peaſe, tares, potatoes, and ſometimes after early oats.

The quantity ſown is from two to two buſhels and a half per acres, broad-caſt,† according to times of ſowing, nature, and condition of the land, &c. The quantity reaped is from twenty to thirty buſhels per acre; in ſome caſes as high as forty.

The ſeed is generally pickled, by ſteeping in chamberley, and powdered with quick-lime: the ſmut is ſeldom or never ſeen, where this practice is followed.

The varieties of wheat grown here are very numerous; the principal are, Zealand, golden ear, white Kent, little wheat, or velvet ear, wooley eared, &c. but of late red wheat has been much uſed, eſpecially upon new or crude ſoils, with great ſucceſs.

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* Upon weak thin ſoils, that leave little profit in corn, it is beſt to continue them in graſs, for five, ſix, or ſeven years; or ſo long as they will pay, by depaſturing with ſheep or young cattle.

† Upon Wark farm, and a few others in Glendale, drilling both barley and wheat, and hoeing them, has been found an excellent practice for deſtroying annual weeds.

*Rye*—was formerly the principal grain grown upon all the dry, ſandy, and light ſoils; but ſince the introduction of turnips, and artificial graſſes, it is rarely cultivated, except upon *very ſandy* ſoils: it is ſown after turnips, or clover, all through the winter, two buſhels and a half per acre; and produce from twenty to thirty.

*Barley*—is generally ſown after turnips, from the middle of April to the latter end of May. The quantity ſown is from two to two buſhels and a half per acre; the produce from thirty to fifty. The common barley is the variety moſt generally cultivated, being early, productive, and better liked by the maltſters. Battle-door, or ſprat barley, is grown by a few; and alſo a variety of long-eared barley, whoſe awns moſtly drop, or are eaſily ſhaken off when ripe, from the grain being ſhorter, plumper, and rounder bodied, than the common ſort. It is preferred by the millers for making into pearl barley. It ripens later than the common ſort, by near a fortnight.

*Oats*—are univerſally grown throughout every part of the county; they are ſown after every ſpecies of grain, as well as graſs or clover lea. The crops are moſt productive upon freſh land. Old worn out tillage, and ſtrong clay land, are improper for the culture of this grain. The varieties uſually cultivated are,

1*ſt*. *Poland Oat*—a variety of which, called *Church's oat*, from the name of the perſon * who firſt introduced them, are now in high eſtimation, and are the beſt early oat yet known for ſowing upon loamy lands in good condition; they are early, very productive, and much liked by the millers, who give two pence per buſhel more for them than the common oat. This variety is known by the grains being remark-

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* Mr. Church firſt had them from Mr. James Robſon, apprentice of Meſſrs. Culley, who brought them out of Scotland, and gave Mr. Church a handful; thoſe he brought to Fenton were loſt.

ably ſhort, large, plump, round, and well filled, and not in the leaſt tailed: a buſhel generally weighs 48 lb.

2*d.* *The Dutch, Freezeland, or Holland Oat* *—were almoſt the only ſpecies of early oats grown here, before the introduction of the Church oat; they are now only grown upon dry, light lands, to which they are better adapted than the Poland oat.

3*d.* *Peebles Oat.*†—A variety of common oat, but much earlier, has been lately introduced from Peebles-ſhire, in Scotland; it is a very proper oat for hilly diſtricts, not only for its earlineſs, but in not being eaſily ſhaken by the wind: the grains are the ſmalleſt of any other oat we know; but from the very thin ſkin, it meals well, and is well liked by the millers.

4*th.* *Common Oat* ‡—is grown upon all ſuch lands as are not thought in ſufficient condition for the Poland or Dutch kind.

5*th.* *Angus Oat.*—A variety of common oat has been introduced of late years from Anguſhire; it is a better bodied grain than the common oat; produces more ſtraw, and anſwers very well in early ſituations. But its being later in ripening than the common oat, will militate againſt its general adoption, in a country where early harveſts are ſo deſirable. This oat anſwers beyond every other, in poor, dry, hungry, rabbit-warren ſoils, from its throwing up ſo much more ſtraw than any other kind; and in theſe ſoils ripens early enough.

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* Were not known here before 1768, when they were introduced by Meſſrs. Culley.

† In ſome places it is called the Red Oat, probably from its being not ſo fair as the common oat; but it is very different from the red oat grown in the midland counties, and ought not to be called by the ſame name: for this reaſon we call it Peebles Oat.

‡ The beſt ſeed of this kind of oat is got from Blainſley, in Scotland.

In point of earlineſs, they ſucceed each other, as claſſed above; the Angus oat being at leaſt three or four weeks later than the Poland and Dutch.

The quantity ſown in general, is ſeven or eight buſhels per acre of the Poland, and ſix of the Dutch oats: theſe quantities are neceſſary, as they do not tiller much; but for the other kinds, we think four or five buſhels ſufficient. The time of ſowing, March or April. The produce of common oats is from twenty to forty buſhels per acre; of the Poland and Dutch, from forty to ſixty. There are ſome inſtances of ſeventy or eighty buſhels per acre, but theſe were generally attended with ſome favourable circumſtances.

*Beans*—have, time immemorial, been a prevailing crop upon all the ſtrong lands in the county, eſpecially along the coaſt to the ſouthward: they generally ſucceed wheat; are ſown broad-caſt, two buſhels and a half per acre, and never hoed. In *this diſtrict*, whoſe ſoil is ſo well adapted to the growth of beans, it is ſurpriſing, that drilling them ſhould be totally neglected, and that this beneficial mode of culture for both beans and peaſe ſhould be confined to a few farmers in Glendale Ward, and near Tweed mouth. With theſe few they were drilled at twenty-ſeven inches diſtance; ploughed between, and hand-hoed; the crops good, and the wheat that ſucceeded equal to that upon the ſummer fallows adjoining. A great objection to the culture of beans here, is their lateneſs of ripening: the produce uncertain; twenty buſhels are a fair average crop.

*Peaſe*—were formerly a more general crop than at preſent; they are moſtly grown upon ſuch lands as have been worn out by running too long in tillage. The early, and late grey pea, are the only kinds cultivated here; the latter is uſually ſown in February or March, and the former in April: three buſhels is the quantity ſown per acre, broad-caſt; and the

quantity

quantity reaped depends very much on ſeaſons; no grain being ſo uncertain a crop as peaſe. A good crop is reckoned at twenty-five to thirty buſhels per acre.

*Spring Tares*—are grown principally for culling, as green food for horſes, to ſupply the vacancy between the firſt and ſecond cutting of red clover, uſed for the ſame purpoſe and for the ſame intention.

*Winter Tares*—have been lately introduced, and promiſe to anſwer well; both kinds are grown upon the fallow lands, intended for wheat or late turnips. The winter tares are ſown in September, and the other in March.

*The Harveſt*—in the vale of Till, and upon Tyne ſide, near Hexham, frequently begins the firſt week in Auguſt: while upon the cold backward ſoils and ſituations, oats will be often uncut the latter end of October, or beginning of November: but the moſt general harveſt is in September. Moſt of the corn is cut with ſickles, by women; ſeven of whom, with a man to bind after them, generally reap an acre per day. Oats and barley are ſometimes mown by a few individuals.

Wheat is ſet up in ſtooks of twelve ſheaves each; oats and barley are *gated*, or ſet up in ſingle ſheaves; and when dry, bound tight at the bottom, and led home, or ſet up in ſtooks of ten ſheaves each. The ſtacks are moſtly round; but ſome of the beſt farmers ſet up their barley and wheat in long narrow ſtacks, which keeps the corn much better and dryer.

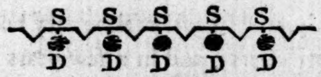
*Turnips*—have not been grown in this county, as food for ſupporting cattle and ſheep, much above forty years. For this purpoſe they were firſt grown in the northern parts of the county; it is but of late years they have been cultivated on part of Tyne ſide—a large portion of excellent turnip ſoil on the banks of this river, from Chollerford to Haltwhiſtle yet remain to be benefited by the culture of this valuable root.

At their firſt introduction they were ſown broad-caſt, and hoed by gardeners and other men, at extravagant wages. The late ingenious Mr. Ilderton, about twenty-four years ſince, had the merit of firſt reducing the price of hoeing, by teaching boys, girls, and women, to perform the work equally as well, if not better, than men. The mode he took was ſimple and ingenious: By a light plough, without a mould board, he divided the field into ſmall ſquares of equal magnitude, and directed the boys and girls to leave a certain number of plants in each ſquare. In a ſhort time they became accurate, regular, and expert hoers; and in a few years all the turnips of the country were hoed by women and boys, at half the expence, and better than by men.

The preſent mode of drilling turnips was firſt introduced into this county about ten years ſince; the advantages with which it is attended, has ſo far recommended the practice, that very few are now ſown broad-caſt; and as we think it is an operation that may be ſerviceable in another diſtrict, we ſhall be more particular in deſcribing the manner of performing it.

The land being made fine, prepared, &c. as in the broad-caſt method, the ploughman draws his firſt furrow as ſtraight as poſſible. In returning he keeps his far ſide horſe in the new made furrow, and his plough at ſuch a diſtance as to form a one-bout ridge like an Λ; by proceeding in this manner, the land, when finiſhed, will appear thus: ΛΛΛΛΛΛΛΛ. The diſtance of theſe little ridges is from twenty-ſeven to thirty inches. A leſs diſtance does not admit of ploughing between the drills.

The next operation is ſpreading the dung; which is performed by a cart going down every third or fifth furrow, and laying the dung in ſmall heaps; women and boys follow with ſmall three-pronged forks, and ſpread it evenly in the bottom of three or five furrows, that is, the one where the dung is dropped from the cart, and thoſe on each ſide of it: this done, the ploughman ſplits the one-bout ridges before raiſed, and covers up the dung exactly in the middle; but before the ſeed can be ſown, theſe laſt formed one-bout ridges require to be flattened at the top, by a ſmall roller that flattens two ridges at once. Upon the top, and exactly in the middle of theſe flattened ridges, the ſeed is depoſited by one or two drill machines, tied to the roller by a rope ſix or ſeven feet long; at which diſtance they follow the roller, each machine being guided by a man. When finiſhed, the work appears in this form:



Where S repreſents the ſeeds, and D the dung directly under it, which is wholly employed in promoting the vegetation of the turnips.

The roller is drawn by one horſe, driven by a boy. Setting up the ridges, and covering in the dung, is performed by a common ſwing plough. The quantity of ſeed ſown, about one pound per acre; it being better to have an abundance of plants, for fear of accidents. The quantity of dung uſed is from fifteen to twenty-five two-horſe cart-loads per acre.

When the plants have got four leaves, we begin to hoe and as they have ſo much room ſideways, we leave them only eight or nine inches diſtance from one another in the rows or drills. The hoers go ſideways, and pull the ſurplus plants, weeds, &c. into the hollow intervals between drill and drill, and the turnips are left as regular as if they were planted. This work is performed by women and children, with the greateſt care and exactneſs, at the expence of four ſhillings per acre.

As ſoon as the plants are recovered, which will be in eight or ten days, a ſmall plough (five inches wide at the bottom behind, and eleven inches at top) drawn by one horſe, takes the earth from the turnip rows, and with the ſoil covers the weeds, &c. which the hoers had pulled into the hollow intervals between the drills. A ſecond hoeing takes place, when the plants are ſtrong enough, and otherwiſe neceſſary; and a few days after, the ſoil or earth before ploughed from the turnip rows, into the hollow intervals, is now equally divided and laid up to each drill or ridge again, by the ſame ſmall plough, and one horſe. This finiſhes the buſineſs, unleſs the land has been very wild and out of condition, and requires more hoeing and ploughing between the drills.

If the drills are made in the ſame directions of the ridges, at the next ploughing for corn, the ſurface will be irregular, and the dung unequally diſtributed. To avoid this, on dry level lands, the drills are made diagonally acroſs the field; but where the ridges are high, it is beſt to make the drills *directly acroſs* the ridges, and draw a plough down the furrows to take off the water.

It is generally ſuppoſed, that a weightier crop is produced by the drill than the broad-caſt method;* but even admitting them equal in this reſpect, the ſuperiority, as a fallow crop, muſt be allowed to the drill; for the repeated ploughings in the intervals, and hand-hoeings in the rows, effectually extirpate the whole race of annual weeds; and ſo much ſurface being expoſed through the winter, makes a higher preparation for any ſucceeding crop. Another advantage is, the facility with which they are hoed, as a boy or girl, nine or ten years old, can hoe them with the greateſt eaſe, and generally better, than experienced broad-caſt hoers, who are apt to take too many plants away; while the young ones, from the apprehenſion of making them too thin, will leave them at any diſtance you ſhew them.

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* Turnips drilled in this manner, were ſold in 1793, for 8l. an acre, a much higher price than was given for any ſown broad-caſt.

*Ruta Baga*---has been tried by a few ; but not ſo long as is neceſſary to draw any poſitive concluſions reſpecting its comparative merits. With us it is not near ſo valuable as the common turnip. Hares are remarkably fond of it, and will not touch the other turnips while there is one of theſe in the field.

*Rape*---is ſeldom grown for ſeed, and perhaps not ſo often for ſheep as it ought, on lands improper for turnips. Upon lands that have grown early oats, and are intended for fallow next year, it is ſometimes ſown in September, as ſpring feed for ſheep, to ſupply the vacancy between turnips and clover. For this purpoſe a little rye is ſown along with it.

*Cabbages*---were cultivated, but gave way again to turnips, it being thought that the latter anſwer as good a purpoſe, and are obtained with leſs trouble.

*Potatoes*---are generally cultivated in drills, from 32 to 36 inches diſtance ; whole potatoes are ſeldom or never uſed for ſets, but cut into pieces, containing one or two ſprouts or eyes. Theſe are planted about 12 inches diſtance, in the bottom of the drill, the dung laid upon them, and the ſoil turned upon the whole, by the plough ſplitting the one-bout ridges. They are kept cleant by hand-hoeing, and ploughing between the drills ; and as the ſtems advance in height, they are earthed up by a common or double mould board plough, with which implements they are frequently taken up, by ſplitting the drills in which they grow, and the roots gathered by women and children.

They are ſeldom grown for the uſe of ſtock, except (by a few individuals) for horſes, to which they give them raw, after the rate of two pecks per-day each horſe, and find them very uſeful in the ſpring, (when the ſtraw and hay become dry) and are good for preventing greaſe or other diſorders, by keeping the horſes cool and open.

*Carrots*---have been frequently tried by individuals; but have hitherto made little or no progreſs, probably from the vaſt trouble attending their cultivation compared with potatoes, which in ſome meaſure anſwer the ſame intention as food for horſes.

*The Artificial Graſſes*---moſt commonly cultivated in this county, are, red clover *(trifolium pratenſe)*, white clover *(trifolium repens)*, and ray-graſs *(lolium perrene)*: with theſe ſome people mix rib-graſs *(plantago lanceolata)*, and upon ſandy ſoils, yellow trefoil *(medicago lupulina)* is ſown with ſucceſs. Few of theſe graſſes are ever grown alone, except red clover, when intended to continue only one year; and even then, a ſmall portion of ray graſs (from one to three gallons) is generally ſown with it, we think with much propriety, as it not only comes early in the ſpring, but thickens the crop, and facilitates the making the clover into hay.

But when land is intended to continue for three or more years in graſs, they are generally mixed in the proportion of - Eight pounds of red clover,
Four ditto of white ditto,
and One buſhel of ray graſs.

To the above quantities are ſometimes added two or three pounds of rib graſs, or yellow trefoil, as the ſoil ſuits.

When the red clover is grown alone, 10 or 12 pounds an acre are ſown upon dry friable ſoils, and from 14 to 16 pounds upon ſtrong worn out clays.

They are ſown in March, April, and May, upon lands fallowed the ſummer preceding for wheat or turnips, ſucceeded by barley, and ought always to be harrowed in as well as rolled. Harrowing is particularly neceſſary upon ſtrong lands growing

wheat;

wheat; and acroſs the ridges is the beſt mode of performing the operation.

The practice of keeping horſes in the houſe, ſheds, or fold yards, all ſummer, upon cut clover, tares, &c. was introduced into this county about 20 years ſince; it is now generally adopted by the beſt farmers, who find their horſes thrive better; are cheaper kept than depaſturing at large; and alſo, that a great quantity of manure is gained by this means, which otherwiſe would have been in a great meaſure loſt, or of very little uſe; as the dung of horſes, when dropped in the paſtures, is moſtly deſtroyed by inſects, in the ſummer ſeaſon.

Upon the beſt ſoils the clover and ray graſs mixed, are generally ready to depaſture with fat ſheep by the middle of April, and from May, through the ſummer, will carry ſix, eight, or ten ſheep per acre, according to the goodneſs of the ſeeds and ground. Theſe paſtures are frequently mown, when the ray graſs begins to flower, which not only increaſes the bottom graſs, but a quantity of excellent hay is obtained, of conſiderable value.

*Common Hay Seeds*---are ſown in the ſouthern and ſouth-eaſt parts of the county, from eight to twelve buſhels per acre. We have already given our opinion of ſuch rubbiſh, and ſhewn the little probability of any good to be expected from thence; indeed the large quantity ſown, is a ſufficient proof of the very ſmall number of vegetative ſeeds they contain; and it often happens, that thoſe few are of the very worſt kinds.

*Watered Meadows*—were firſt introduced into this county by Meſſrs. Culleys, about 26 years ſince; and notwithſtanding the manifeſt advantages of this operation, yet ſo ſlow is knowledge in making its way, that it was near 20 years before any other perſon ventured to purſue the practice, and profit by the example that had been ſo laudably ſet them: it is now beginning to ſpread in the neighbourhood,* and we hope in a few years will be adopted in every ſituation that can derive benefit from it.

Sir William Loraine, with a ſpirit that marks his wiſh for improvement, brought two men from Leiceſterſhire, to drain his grounds at Kirkharl. This buſineſs they ſeem to have underſtood and executed well; but we think they have miſled the worthy Baronet, in telling him they underſtood laying out land for watering. We were ſorry to ſee a firſt attempt executed in ſo bad a ſtyle, which many tend more to diſcourage the practice, than forward its introduction.

*Draining*—is one of thoſe improvements that has lately made its way into Northumberland, and is now moſtly practiſed in the middle and northern parts of the county; the theory is pretty well underſtood in thoſe diſtricts, and the practice is becoming more prevalent every year. Hollow drains are generally uſed, filled with ſtones, where they can be got; where theſe cannot be obtained, (but at a great expence) ſod drains are the only reſource, eſpecially in the northern parts, where there is ſo little wood.

## MANURES.

IN ſome parts of this county, where the turnip culture is carried to ſuch extent, every exertion of ingenuity is practiſed to raiſe a large portion of *Farm Yard Dung*; for without this valuable

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* Mr. William Atkinſon of Jevering, began about ſix years ſince, and Mr. Jobſon of Turvilands, laſt year, and has this year prepared near 30 acres, and purpoſes doing much more, being well ſituated for the operation.

valuable article, it is well known that good turnip crops are not to be expected, and the farmers of ſtrong ſoils are ſufficiently ſenſible of the advantage of dung to their crops, not to uſe every endeavour to increaſe its quantity.

The farmers of turnip ſoils, in order to have their dung ſufficiently rotted, lead it out of the fold yard in the winter, make it up in large long dunghills, in order to increaſe the putrefactive proceſs, and prepare it for that ſtate of diſſolution, by which its component parts are ready to be aſſimilated into new bodies; and in which ſtate only it can be of uſe in vegetation.

*Lime*—is found in many parts of this county, of an excellent quality. In Bambro' Ward, where it has been long uſed, many intelligent farmers begin to doubt of its efficacy, and the propriety of continuing to lay it upon their *old tillage lands*. Upon the dry ſoils in Glendale Ward, where it has not been uſed much above 40 years, its effects are more conſpicuous, eſpecially upon ſuch lands as have been ſeldom or never limed. In its natural ſtate, the ſoil of this diſtrict is dry, duffy, light, full of fibrous roots, and when in fallow, on paſſing over it, you ſink to the ancles. After being ſufficiently limed, the fibrous roots diſappear, the ſoil becomes denſer, firm to the tread, retentive of moiſture, and produces better and more abundant crops of grain than before. When laid to graſs, the effects of the lime appear to an inch, by the ſuperior verdure which takes places as far as it has gone. Many of theſe dry ſoils, after being limed, grow white clover naturally; where not limed, it ſeldom appears; but they cover totally with *agroſtis capillaris* (fine bent), which is never ate by any kind of ſtock, if they can get any other food. When land has been ſufficiently limed, this plant diſappears; and whenever it is found, it may be ſafely concluded, that the ſoil on which it grows has not had its due quantity of lime.

*Stone Marl*—abounds in many places near Tweed ſide. It has formerly been uſed in conſiderable quantities, but the more immediate effects of lime have entirely ſet aſide the uſe of ſtone marl.

*Shell Marl*—is found in many places in Glendale Ward; but the greateſt quantity is at Wark and Sunny Laws; it has been formed by a depoſit of various kinds of ſhells, (many of which are yet perfect) forming a ſtratum (ſeveral feet in depth) of pure calcareous earth; it is uſed with great advantage, at the rate of 20 or 30 cart loads an acre.

*Sea Wrack, Sea Ware, or Marine Plants*—driven a-ſhore by the tide, are uſed with great effect, wherever they can be had. Of theſe the *fucus veſiculoſus*, and its relatives *F. ſerratus & inflatus*, are not held in much eſtimation, and when uſed, require to be laid up in large heaps to putrefy. If laid upon the land, as the others are, when taken immediately from the ſhore, they dry, and turn to a black coriaceous ſubſtance. The *fucus digitatus* is the great favourite, and another ſpecies called *May weed*, which we cannot point out by its Linnean name, not having had an opportunity of ſeeing it.

*Coal Aſhes*---are chiefly uſed in the vicinity of the principal towns, as a dreſſing for graſs land; for this purpoſe they are found of conſiderable benefit, eſpecially upon ſtrong, coarſe, and wet lands.

## IMPLEMENTS OF HUSBANDRY.

*The Carts*—USED in this county are moſtly drawn by two horſes; they are, in general, heavy, clumſy, and ill formed, and ſuch as we think few diſtricts would wiſh to imitate.

*Waggons*—drawn by four horſes, are uſed by ſome farmers for leading coals and lime; but we hope a few years will ſhew the abſurdity of employing theſe unwieldy carriages, ſo deſtructive to roads, and of ſo little utility to farmers.

*The Swing Plough*—made in imitation of the Rotherham plough, is in general uſe through every part of this county; its form is conſtantly varying, no fixed rules being known for its conſtruction; ſcarce two carpenters making them alike, differing widely in length and height of the beam, point of yoking, form of mould board, &c. By obſervation, experience, and remedying defects when pointed out, ſome of them have obtained the art of making very good ploughs, whoſe forms are nearly what they ought to be. *

*Harrows.*—A large heavy harrow called a brake, is commonly uſed for reducing rough land, eſpecially fallows. Single horſe harrows, containing four bulls, and 24 tines or teeth, five or ſeven inches long, (below the bull) are generally uſed for harrowing in ſeed, after it has had a ſingling by the brake; a man drives three horſes, and every horſe draws his own harrow. Some people uſe two horſe harrows, joined in the middle by crooks and loops; and alſo ſmall light harrows with ſhort tines, for putting in graſs ſeeds.

*Rollers*—for reducing cloddy land, rolling wheat in the ſpring, and graſs ſeeds, are moſtly made of wood; they are generally 5 ½ feet long, and from 12 to 30 inches diameter: thoſe uſed for flattening the one bout ridges, for drilling turnips upon, are only nine or ten inches diameter.

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* An Eſſay on the Conſtruction of the Plough, deduced from Mathematical Principles and Experiments, will ſhortly be offered to the Public, by J. Bailey.

*Drills.*—Thoſe uſed for drilling turnips are moſtly hollow cylinders of tin, with holes of a ſufficient ſize for letting the ſeed drop out. The defect of this drill is, that when the holes are made of a due ſize for ſowing a proper quantity, they are apt to ſtop; by which means, conſiderable ſpaces are ſometimes unſown. To remedy this, the holes are made wider, but then much more ſeed is ſown than neceſſary.

For ſowing the different kinds of grain, the drill with globular cavities on the outſide of a ſolid cylinder is uſed, in preference to Cook's drills. All theſe drills are defective, in not being able to regulate the quantity of ſeed ſown, to ſuit ſoils, ſeaſons, &c.*

*Threſhing Machines*—are *now* becoming general in the northern parts of the county; they are all upon the principle of the flax mill; which principle was firſt introduced into this county for threſhing corn, by Mr. Edward Gregſon, near 20 years ſince; † the machine he uſed was worked by a man, who could threſh with it 18 buſhels of wheat in a day; but being hard work, and Mr. Gregſon dying ſoon after, it was neglected. Mr. Thomas Gregſon informed us, that his brother Edward took the idea from ſomething of a ſimilar nature he had ſeen in Scotland, probably the ſame which Mr. David Meldrum gives an account of, about the ſame time, in a letter to Mr. William Charge, of Cleaſby, in the county of York; which he deſcribes, as being the ſame as the flax mill; that it threſhed 150 buſhels of oats a day, which dropped through a ſcreen into a winnowing machine, that dreſſed them at the ſame time.

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* A drill is now making, and will ſhortly be preſented to the Board of Agriculture, which we preſume will remedy this defect.

† About this time, Mr. Oxley erected a threſhing machine at Flodden, moved by horſes, in which the corn was fed in betwixt two *fluted rollers*, and ſtruck by ſwitchers, placed as thoſe are in the preſent machines; only they *hung on hinges*. Thoſe in uſe now, and of Mr. Gregſon's, are *fixed*. The complaint of Mr. Oxley's machine was, that it did not threſh common oats clean, probably for want of velocity; for it is found in the machines now uſed, that if the ſwitchers move with a velocity of only 1500 feet per minute, they will not threſh clean; and experience has proved, that to threſh common oats clean, requires a velocity of 2500 feet per minute.

We were informed by Francis Kinlock, Eſq. of Gilmerton, in Scotland, that while he was attempting to perfect Mr. Ilderton's machine, he ſaw a flax mill, made for the uſe of poor families, worked by a man. It ſtruck him, that it would threſh corn, and he got one made, with the addition of two ſmooth rollers, for taking in the corn; the work being too hard for a man, he ſent it to Mr. Mickle's mill, to have it tried by water. Soon after, Mr. Mickle's ſon built a threſhing mill at Kilbogie; and after ten or twelve had been erected in the neighbourhood, by other workmen, he applied to Mr. Kinlock to take out a patent, who told him, that he did not look upon it as an original invention; and that a patent would not be of any uſe. Some time after this, Mr. Mickle took out a patent, (for England only) in his own name, for the making of a machine, whoſe leading principle had been applied to the ſame purpoſe, at leaſt ten years before.

Theſe machines are moved both by water and by horſes; the former is certainly the beſt power where it can be got, as moſt of thoſe that have been erected lately require four horſes. The beſt and ſimpleſt we know, that goes by two horſes, is at Doddington, erected by Mr. Wilkie, the late tenant, the expence of which was about 60l.

In thoſe which have a winnowing machine under them, the corn and ſtraw is thrown together upon a ſcreen, through which the grain drops into the winnowing machine, and from off which the ſtraw uſed to be taken by a man; but a circular rake, invented* about four years ſince, performs the work much better, and ſaves the expence of a labourer. This rake is now added to all thoſe that have been lately erected; and only cauſes an addition to the machinery of one light wheel.

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* By Mr. Bailey, who firſt applied it in his machine at Chillingham.

Some of theſe machines will threſh and winnow twenty-four buſhels of wheat in an hour. But the quantity threſhed in a given time, depends on the quality of the corn, and the length of the ſtraw.

The number of hands required, are, a woman to feed the machine, another to hand the ſheaves to the feeder, a third to receive and riddle the dreſſed corn.

*The Winnowing Machine*—is in univerſal uſe here; we believe very little, if any corn is dreſſed by any other means—they were firſt invented by a farmer of a mechanical genius called *Rogers*, who lived at Cavers near Hawick, and whoſe grandſon, now a carpenter there, ſtill makes them, and perhaps of as uſeful a form as any other perſon; and at as low rates as from 2l. 8s. to 3l.

Old Rogers, as we were told by his deſcendant, happened in the year 1733 to ſee a machine thrown out of the way as uſeleſs in an old granary at Leith,* of which he took ſuch notice, that on his return home, he ſet about making one, which he ſold to the late Mr. John Gregſon of Wark, by whoſe recommendation they were tried by others, and for many years have been univerſally uſed.

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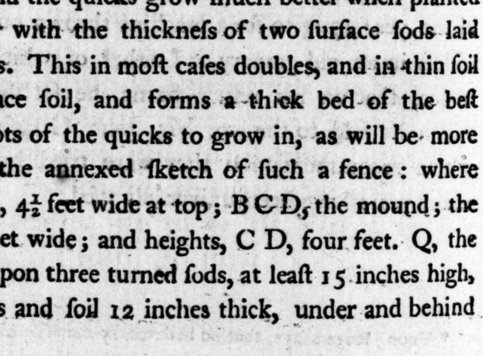
* Young Rogers ſays, that he believes the machine his grandfather ſaw at Leith was brought from Holland; and the writer of this article has ſomewhere read, or heard, that the Dutch brought them from the Chineſe, who were probably the firſt inventors; and it is remarkable, that a ſmall farmer in a remote part of Scotland ſhould be the firſt to bring into notice, this moſt uſeful inſtrument, which we now would not know how to do without.

## INCLOSURES.

THE parts of this county capable of cultivation are in general well incloſed by live hedges; the only exception is a ſmall part of the vales of Breamiſh, Till, and Glen. But even here, the advantages of having well fenced fields is ſo well underſtood, and ſo much deſired by the tenants, that we hope in eight or ten years the whole of this valuable diſtrict will be incloſed by proper fences.

The ſize of incloſures vary with the ſize of farms. In ſome parts, from two to ſix or eight acres; in the northern parts, where the farms are large, the fields are from 20 to 100 acres.

The fences moſt generally uſed for new incloſures, are earth mounds; at the baſe of which, and on the edge of the ditch out of which they are raiſed, are planted the quicks, generally upon a turned ſod, ſix inches high; which we think too low, as we always find the quicks grow much better when planted three ſods high, with the thickneſs of two ſurface ſods laid under their roots. This in moſt caſes doubles, and in thin ſoil trebles the ſurface ſoil, and forms a thick bed of the beſt earth for the roots of the quicks to grow in, as will be more clearly ſeen in the annexed ſketch of ſuch a fence: where A B is the ditch, 4½ feet wide at top; B C D, the mound; the baſe, B D, ſix feet wide; and heights, C D, four feet. Q, the quicks planted upon three turned ſods, at leaſt 15 inches high, with ſurface ſods and ſoil 12 inches thick, under and behind its roots.



The quicks ſhould never be planted nearer each other than nine inches, and upon good land a foot. Quicks, four or five years old, with ſtrong clean ſtems, are always to be preferred to thoſe that are younger and ſmaller.

It is a cuſtom in ſome parts, to clip young quicks every year. This makes the fence look neat and ſnug, but it checks their growth, and keeps them always weak in the ſtem, and, when they grow old, open at bottom; while thoſe that are left to nature get ſtrong ſtems and ſide branches, which, by interweaving one with another, make a thick and impenetrable hedge, and if cut at proper times, ſay every eight or nine years, always will maintain its ſuperiority over thoſe that have been clipped from their firſt planting. In point of ſaving labour, and of profit, there is no compariſon; and for beauty, we prefer nature; and think, a luxuriant hawthorn in full blow, or loaded with its ripened fruit, is a more pleaſing, enlivening, and gratifying object, than the ſtiff formal ſameneſs produced by the ſhears of a gardener.

*The advantages of incloſing* private property in this county, principally ariſe from ſeparating lands of different qualities, which can by theſe means be employed in ſuch culture, or depaſtured by ſuch ſtock as the occupier thinks is moſt ſuitable; and where ſheep are kept, they feed with more facility and readineſs, being freed from the whims of the ſhepherd, and the teazing of his dog.

Beſides, by ſeparating the dry ground from the wet, a ſtockmaſter has it more in his power to avoid that fatal malady the rot.

*The Commons*—in this county capable of being converted into profitable tillage land, are now very trifling, the greateſt part having been incloſed within the laſt thirty years; the whole amounting to near 120,000 acres. Of this, the commons belonging to the manors of Hexamſhire and Allendal contain

50,000

50,000 acres, a great part (35,000 acres) of which is high, expoſed, heathy mountains. Theſe are to be converted into ſtinted paſtures, not being thought capable of any other improvement.

The increaſed value of ſuch incloſed commons, depends (as we have ſtated in our Report of Cumberland) entirely upon the ſyſtem of cultivation purſued. Upon Bullock common there are lands which in a ſtate of common were not worth more than 1s. or 1s. 6d. an acre, a part of which has been in tillage twenty-five years, and grown three white crops ſucceſſively, betwixt one fallowing and another. This land is now dear enough at 4s. or 5s. an acre; while Mr. Hopper's of Blackedley is worth 8s. or 10s. His ſyſtem is, when firſt broke up from heath, to pare and burn, and plough in the autumn; next ſpring plough acroſs, lime and ſow oats; then fallow and lime, three fother per acre, and ſow turnips; after which, oats and graſs ſeeds, four pounds red clover, five pounds white, and one buſhel of ray graſs, and continue in graſs, ſix or ſeven years; then plough for oats—turnips—oats—and ſow up with graſs ſeeds as before. There are inſtances, where the increaſed value is in the ratio of twelve to one, or even more; but theſe are, where the commons were of no value to the proprietor, which, indeed, is in general the caſe.

*The Extent of Waſte Lands*—or open mountainous diſtricts, not capable of affording profit from cultivation by the plough, are very great, as we have before ſtated; conſiderable quantities of which are private property, and of courſe may be depaſtured by ſheep or other ſtock to the greateſt advantage; of thoſe that are common, it would certainly be beſt for every man to know his own ſhare.

Draining would be highly uſeful to many parts of theſe diſtricts; three are alſo many excellent ſituations for planting, and of all other purpoſes to which ſuch lands are convertable, this ſpecies of improvement ſeems to us the moſt promiſing to make the greateſt returns.

*Labour.*—Through the greateſt part of this county, and eſpecially upon the large farms, there are very few ſervants kept in the houſe; ſeldom more than two men and two maids: but the ploughmen, carters, barnmen, ſhepherds, &c. have each a houſe of their own, and are generally married. The conditions of ſervitude for one year are:

| | | | | | |
|---|---|---|---|---|---|
| 2 | Cows kept, or money in lieu at 3l. each, | | £ 6 | 0 | 0 |
| 3 | Buſhels of wheat - | at 5s. per buſh. | 0 | 15 | 0 |
| 33 | Ditto of oats - - | at 1s. 8d. ditto | 2 | 15 | 0 |
| 12 | Ditto of barley - - | at 2s. 6d. ditto | 1 | 10 | 0 |
| 12 | Ditto of rye - | at 3s. 4d. ditto | 2 | 0 | 0 |
| 10 | Ditto of peaſe - - | at 3s. 6d. ditto | 1 | 15 | 0 |
| 24 | lb. of caſt wool - | at 6d. per lb. | 0 | 12 | 0 |
| 1 | Buſh. of potatoes planted, a pig tethered, keeping hens, &c. | | 2 | 4 | 0 |
| | Leading coals, five or ſix cart loads, | | 1 | 0 | 0 |
| | | | £ 18 | 11 | 0 |

They are bound to find a woman labourer to work for the following wages: For harveſting 6d. per day, for hoeing turnips,* haymaking, ſcaling, weeding corn, &c. uſed to be 4d. per day, but was laſt year raiſed to 6d. per day.

In

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* In this branch of labour, the women in the northern part of this county excel. The writer of this has at different times viſited Norfolk, Suffolk, and all the principal turnip diſtricts in the iſland; but never ſaw turnips ſo well hoed and compleatly cleaned, as on theſe borders. Nor does he know a finer ſight than in the turnip ſeaſon to ſee large fields in garden like culture, quite alive with female hoers, manifeſting their happineſs by lively ſtrokes of ruſtic wit, in truly rural ſimplicity.

" The

In addition to the above conditions the ſhepherd generally has as many ſheep kept as are worth four or five pounds a year; but, if he has any under ſhepherd to keep to aſſiſt him, the number is increaſed accordingly. In the hilly diſtricts, their ſheep ſometimes amount to hundreds, beſides ſix or eight cows.

An overſeer, or head ſervant, has, in addition to the above, as much money as to make his place worth from 20l. to 30l. a year.

Threſhing is moſtly done by the piece; a twenty-fifth part of the corn threſhed being the general cuſtom, if the ſtraw be taken away unfolded; but if the threſher folds the ſtraw, he has a twenty-firſt part, and finds a woman to help to dreſs the corn, and to work at all other work, for the ſame wages as the others; he has ſtraw for his cow in winter, but pays for her ſummer's graſs.

The yearly wages of houſe ſervants are, for men, from 7l. to 10l.; for women 3l. to 4l.

The wages of day labourers are, without victuals or any allowance of beer:

| | s. | d. | | s. | d. |
|---|---|---|---|---|---|
| Men, in Summer, - - | 1 | 2 | to | 1 | 4 |
| —— Winter - - | 1 | 0 | to | 1 | 2 |
| —— Harveſt - - | 1 | 6 | to | 1 | 9 |
| Women, ditto - - | 1 | 0 | to | 1 | 3 |
| —— for other work - - | 0 | 6 | to | 0 | 8 |
| Maſons - - - | 1 | 8 | to | 2 | 0 |
| Carpenters - - - | 1 | 6 | | | |

Upon ſome of the large farms, a carpenter and ſmith are hired by the year.

The

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—— "The ruddy maid,
"Half naked, ſwelling on the ſight, and all
"Her kindled graces burning o'er her cheek,
"While heard from dale to dale,
"Waking the breeze, reſounds the blended voice
"Of happy labour, love, and ſocial glee."

THOMPSON.

The hours of working are from ſix in the morning to ſix in the evening, when the length of day will permit, with the following intervals of reſt:

| | | Hours | Min. |
|---|---|---|---|
| At breakfaſt | - - | 0 | 30 |
| Ten o'clock | - - | 0 | 30 |
| Dinner | - - - | 1 | 30 |
| Four o'clock | - - | 0 | 30 |
| | In all | 3 | 00 |

hours of reſt, and nine of labour.

*Proviſions*---The price of grain in this county fluctuates very much: betwixt the markets of Newcaſtle and Hexham, and thoſe of Alnwick, Berwick, and Wooller, there is always a conſiderable difference,† the prices in the northern parts being in general the loweſt, or among the loweſt, in the kingdom, owing to the produce being ſo much greater than the home conſumption. This ſurplus affords large quantities to be yearly exported from Berwick, Alemouth, and other places along the northern part of the coaſt.

The average prices of grain at Berwick, 1792.

| | | S. | D. | |
|---|---|---|---|---|
| Wheat | - - | 5 | 0 | per buſhel. |
| Rye | - - | 3 | 4 | ditto |
| Barley | - - | 2 | 6 | ditto |
| Oats | - - | 2 | 2 | ditto |
| Peaſe | - - - | 3 | 6 | ditto |

Fat ſtock being eaſily driven from one place to another, keep the price of butcher's meat more upon an equality in all the markets of the county.

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† Wheat and barley, in Newcaſtle market, is moſtly ſixpence a buſhel higher; and in Hexham, nine-pence.

The average price of butcher's meat is from threepence-halfpenny to fourpence-halfpenny per pound; but in May and June it generally gets to fivepence.

| | S. | D. | | S. | D. |
|---|---|---|---|---|---|
| Butter - - | 0 | 6 | a pound of 16 ounces. | | |
| Skim-milk and ewe cheeſe | 0 | $3\frac{1}{2}$ | | | |
| Fat gooſe - - | 2 | 0 | | | |
| Duck - - | 0 | 8 | | | |
| Chicken - - | 0 | 6 | | | |
| Eggs, per dozen - | 0 | 3 | to | 0 | 6 |

*Roads.*---The turnpike roads are moſtly in good order; thoſe that have an opportunity of getting whinſtone, or limeſtone, are the beſt; but they certainly would be better if the ſurveyors would order the ſtones to be broken ſmaller and the roads made wider. One great objection to ſome of theſe roads is the many ſteep banks they are diſgraced with, ſome of the worſt might have been eaſily avoided; but it ſeems the original ſetters-out of theſe roads had a predilection for climbing and deſcending ſteep banks. This is notorious on both the roads upon Rimſide-Moor, without even the plea of being nearer; as the leveller road would have been nearer, travelled in much leſs time, and with far leſs fatigue. Some ſimilar caſes appear on the poſt road, which we hope will be remedied in the next application to Parliament for a new act.

The townſhip roads are in ſome places good, but by far the greateſt part are deſerving of a different appellation; the cauſe of this deficiency is in moſt caſes to be attributed to the neglect and manner of performing the ſtatute-work.

One mode of remedying this neglect, would be to appoint a ſurveyor (with a ſmall ſalary, who ſhould be empowered to collect the compoſition due for ſtatute-work, and employ this money for repairing the road where *moſt neceſſary* for the *public in general*, without having regard to the convenience or influence of individuals.

A book ſhould be kept by the ſurveyor, which ſhould be yearly examined, ſettled, and ſigned by a committee of inhabitants, before it went to the magiſtrates. We know from experience, that by this means the road would be much better made, and in near double the quantity: for when a farmer ſends his cart to perform ſtatute-duty, it ſeldom carries more than half a load, and the ſervants practiſe every manœuvre to put off time, and do as little as poſſible, which would not be the caſe with hired carts, as every inhabitant would be ready to report any mal-practices.

*The Manufactures*, as well as the *Commerce*, are derived from, or connected with the coal trade and mines; ſuch as glaſs works, potteries, founderies, forges, &c. Two or three eſſays to eſtabliſh manufactures of woollens, have been lately made at Alnwick, Mitford, and Acklington, which promiſe to do well: a cotton mill erected at Nether-Wilton is not ſo flouriſhing. There is no doubt but agriculture is much benefited in the conſumption of its produce, by the great number of people employed in thoſe undertakings. (Morpeth market alone furniſhes weekly, on an average, 1000 ſheep and 100 cattle, beſides what are ſold at home.) But we do not find any new modes of practice or improvements in agriculture introduced in their vicinity, or reſulting from the exertions of thoſe connected with them.

## HINTS FOR IMPROVEMENT.

TO thoſe who practiſe the ſyſtem of taking two or three white crops to a fallow, and of continuing their lands in tillage for nine, twelve, or more years, and of ſowing it up with common hay-ſeeds, white clover, &c. and letting it continue as many years in graſs, as it continued in tillage; we would recommend ſome of the ſyſtems mentioned towards the latter end of the article *Rotation of Crops*, (ſee page 32) and inſtead of eight or ten buſhels of common hay ſeeds, to ſow as many pounds of red clover, and from two to four pecks of ray graſs.

We have before expreſſed our ſurpriſe, that *beans and peaſe* were not *drilled* in all that extenſive diſtrict along the coaſt, where they are ſo much cultivated. We hope that the good ſenſe and enterpriſing ſpirit of the wealthy farmers of this diſtrict will no longer be ſwayed by old cuſtoms, but will be ready to make a fair experiment of a ſyſtem which has been practiſed on ſimilar ſoils with ſucceſs, and may, in all probability, be equally beneficial on theirs. The difference betwixt a naked fallow, and a crop of beans, is too ſtriking to need any elucidation.

There are many parts of this county capable of deriving great benefits from the practice of watering meadows, eſpecially where the waters are unmixed with any vitriolic impurities derived from their connection with coal-mines, or ſtrata of an aluminous earth. We have alſo our ſuſpicions of ſuch waters as are ſtrongly tinctured by infuſions of peat-moſs.

*Draining*---is alſo another operation from which great advantages are to reſult; but theſe ſhould be *hollow drains*, executed with judgment, and well ſecured: and not *ſurface drains*, a foot wide, and ſix or eight inches deep; ſuch are mere *temporary reliefs* to a tenant, but no *permanent improvement*.

There is certainly great improvements to be made in the ſtock of this country; and, like many other branches of ſcience, the more we inveſtigate the ſubject, the more we are convinced of its unlimited improvements. But improvements of this kind are not ſo eaſily ſpread as thoſe of cultivation. If a farmer ſees any modes of practice more beneficial than thoſe he knew before, he can readily adopt them ; or if he diſcovers and ſelects a new variety of any ſpecies of grain more productive and more valuable than any hitherto known, it multiplies ſo faſt, that it is readily diſſeminated ; but *improved breeds of ſtock* are not ſo readily diffuſed ; they are much ſlower in their propagation, and much more eaſily contaminated, and are only to be preſerved by *attention* and *judgment*. When *theſe* become general, we may hope that improved breeds of ſtock will prevail over the whole county. This period is probably more diſtant than a true patriot would wiſh ; but in the mean time we hope, that thoſe who are already poſſeſſed of improved breeds of ſtock, will not ſlacken in their purſuits ; that by their example, the knowledge and practice of breeding may, by degrees, be better underſtood, and a ſpirit of emulation more generally diffuſed. When we conſider and reflect how ſlow that moſt valuable breed of ſheep (now beſt known by the appellation of the *Diſhley Breed)* has ſpread, and how very ſmall a part of this iſland they ſtill cover, one would be almoſt led to think that breeders both ſhut their eyes and ears. Mr. Bakewell has been employed above 40 years in the important taſk of improving that breed of ſheep, to a degree of perfection unknown at any former period ; yet it is a very few years ſince many of his near neighbours purſued a very different, and, we believe *now*, confeſſedly more unprofitable ſort. To this day, we are pretty well informed, that more than half of the large fertile county of Lincoln ſtill follows a ſlow, ill thriven, unprofitable kind, though adjoining to the county of Leiceſter. This is the more lamentable, becauſe that county certainly produces more ſheep than any other in this iſland, and perhaps we do not hazard too much if we aſſert it as our opinion, that it ſends more mutton to market than any two counties in the kingdom. However, we flatter ourſelves, that the labours of the Board of Agriculture will have a happy tendency towards opening men's eyes, and convincing them of the propriety of not only cultivating the ground in a more maſterly manner, but of ſtocking the paſtures with the moſt profitable animals.

Nothing would tend ſo much towards forwarding the perfection of Agriculture in all its branches, as *public farms* in every county, conducted by proper perſons; and as the gentlemen of large landed property would be the moſt intereſted in the reſults of ſuch an inſtitution, they certainly ought to be the guardians and ſupporters of it. The principal expence would be at its firſt inſtitution; when once got into a proper ſyſtem, it would require little, if any further aid.

If eſtates of 500l. a-year, and upwards, were only to contribute 10l. per thouſand, yearly rent, it would, in this county, raiſe a ſum ſufficient for ſetting forward the undertaking. We ſuppoſe the farms to contain from 700 to 1000 acres, of various ſorts of land, ſome mountain paſtures, and an opportunity of converting a part of it into watered meadows. We know ſituations of this ſort that might be rented for five or ſix hundred pounds a-year.

A farm of this kind would not only be a ſchool where youth might be inſtructed in agriculture; but even experienced farmers might often viſit it with advantage, to learn the reſults of new experiments, and adopt thoſe that promiſed to be uſeful. It would be eaſy to enlarge on this ſubject, and ſuggeſt many uſeful appendants to ſuch an inſtitution, ſhould the gentlemen of landed property ever think of carrying a ſcheme of this kind into execution.

OBSTACLES

## OBSTACLES TO IMPROVEMENT.

IN our journey through this county, we found that the payment of tythes in kind was conſidered as the chief obſtacle to improvement. In our Survey of Cumberland we have ſhewn the great uncertainty of employing money in ſpeculations of improving land, and that the tythes, in ſuch caſes, are a large portion of a man's capital in trade; and not a tenth of the *improved produce* of the earth, which is all that some have believed was intended by the original impoſers, as there can be no wiſh to take any thing from the holders of tythes, but to render them a fair equivalent, for what is juſtly their due; (which there would be little trouble in doing, notwithſtanding the many difficulties that have been invented, to perplex this moſt intereſting queſtion) it is to be hoped that the time is not far diſtant, when this great means of national improvement will be brought under the conſideration of parliament.

## MISCELLANEOUS OBSERVATIONS.

*Moles and rats*—ARE two ſpecies of vermin which we think capable of being in a great meaſure extirpated, or ſo far reduced, as to render their depredations of little conſequence. In Cumberland, a mole is rarely ſeen: this is in conſequence of every occupier of land contributing in his due proportion towards their deſtruction. A ſimilar plan eſtabliſhed in this county for deſtroying vermin, we believe, would readily be complied with by every good farmer; and the bad ones ought not to have it in their power to injure their more induſtrious neighbours.

*Crows*—of late years, have become a very great nuiſance, not only for rooting up wheat, and other grain, in a ſprouting ſtate; but clover and potatoes, corn ſtacks, and young plantations, are greatly injured by them. Laſt ſpring, a collection of ſixpence a plough was made by a few farmers in Glendale Ward, for pulling down their neſts. Many thouſands were deſtroyed by this means; and we hope the practice will be continued until they are found leſs pernicious.

*Dogs*—in every place are ſwarming: two thirds of them at leaſt are kept by people who have no manner of uſe for them; and who are complaining of their inability to obtain food for their families. It would be doing theſe people an act of juſtice, to exempt them from doing ſtatute duty on the highways, on condition they did not keep a dog; and to ſupply the deficiency by laying a tax upon dogs, which tax ſhould be applied towards repairing the roads.

*Weights and Meaſures*—are in a ſad ſtate of confuſion; a pound, a ſtone, a buſhel, a boll, are rarely the ſame in different markets; and frequently vary in the ſame market for different articles.

The Board of Agriculture could not do the public a greater ſervice, than by bringing forward a regulation of weights and meaſures. One weight, and one meaſure, derived from the ſame root, and increaſing or decreaſing in a ten fold ratio, would introduce ſuch ſimplicity, eaſe, and perſpicuity, into all tranſactions of buſineſs, (where calculations are neceſſary) as would prevent the numberleſs miſtakes and errors which are daily happening.

Preparations for remedying this great inconvenience have been made at different times, and we believe, there are ſufficient materials for perfecting the meaſure, whenever it is thought proper to bring it forward.